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Introduction

The Meridian* Programmable Data Adapter (MPDA) is used to pass asynchronous data through Northern Telecom PBXs. It works with either an SL-1 or SL-100 PBX.* The MPDA supports Data Terminal Equipment; there is no way to configure the MPDA for Data Communications Equipment, but a “null modem” adapter can be used to allow Data Communications Equipment to MPDA compatibility.

Just as your phone has a unique Directory Number (extension), the MPDA must have its own data Directory Number configured in the software of the PBX.

* Meridian, SL-1 and SL-100 are trademarks of Northern Telecom.

Attached to the MPDA via its RS232 serial port will be a dumb terminal or a personal computer. The dumb terminal can talk directly to the MPDA. A personal computer will need some special communications software written specifically for it in order to access its serial port. Serial printers may also be connected to the MPDA.

Once a data call has been established you can perform data communications through the PBX to a far end service, such as a mainframe, a modem pool, other PCs, or printers.

The MPDA uses EEPROM non-volatile read/write memory for permanent storage of settings and configuration parameters. Auto Dial and Speed Call numbers are stored at the PBX.

Getting started

Before using the MPDA to make data calls:

Make sure your MPDA is present within your Meridian Modular Telephone. In the back of the telephone, a red LED will be blinking at a constant rate to indicate the MPDA is powered up and ready to go.

Attach your terminal or PC serial port to the MPDA 25 pin D connector via an RS232 cable.

Make sure that your terminal or PC is powered up and ready to send data.

If you are using a PC, your communication software (to make your PC simulate a terminal) should be running.

Making a data call

The procedures in this section are all you need to make basic data calls. To find out more about the MPDA's features and capabilities, see the following chapters, which describe the three dialing methods in more detail.

The three methods are provided for your convenience. Use the dialing method you find most comfortable, or which performs the functions you desire to use.

Note: Throughout this guide, <CR> refers to a carriage return.

Keyboard dialing

- 1 <CR>.

ENTER NUMBER OR H (FOR HELP):

- 2 Enter number of far end data device and <CR>.

CALL CONNECTED.SESSIION STARTS

- 3 <CR>.

Follow normal procedures for logging on and using the data service.

AT dialing

- 1 AT <CR>.

OK

- 2 ATDxxxx (where xxxx is the number of the far end data device).

CONNECT

- 3 <CR>.

Follow the normal procedures for logging on and using the data service.

Keypad dialing

- 1 Press Program key (P-key) and dial # on phone's keypad. If your phone has a Display it will show:

MDIAL
ENTER DIGITS, P TO EXIT

- 2 Dial number of the far end data device. Display will prompt:

DATA CALL CONNECTED

Terminal will prompt:

CALL CONNECTED.SESSION STARTS

- 3 <CR>.

Follow normal procedures for logging on and using the data service.

Releasing a data call

Any of the following methods:

- Hold down break key(s) for 1.6 seconds or longer.
- Press break key(s) three (3) times in quick succession.
- Press P-key on phone and dial *.
- If the far end data device releases the call, the MPDA automatically drops its end.

When a data call is disconnected, the terminal will display:

RELEASED

or

NO CARRIER

Dialing methods

The MPDA provides three methods for making data calls through Northern Telecom's PBX: keyboard dialing, AT dialing and keypad dialing. Keyboard and AT dialing are done by entering commands at a terminal (or a PC running software to make it simulate a terminal), while Keypad Dialing is done via the telephone keypad.

Keyboard dialing is menu driven. Data calls are made by hitting <CR> to get a Main menu. By navigating through the menus, different features can be activated.

AT dialing is very similar to methods used to make modem calls with a Hayes Smartmodem.* The user enters a command starting with the letters "AT" followed by a few letters to distinguish the command, and a <CR>.

Keypad dialing uses the top right-hand function key on the telephone set, called the Program Key (P-key). All keypad dialing is done by first pressing the P-key, followed by a one- or two-digit command to be executed. You must hit the P-key again to execute the command, and to relinquish the keypad for use by the telephone set or to enter additional commands.

Switching between keyboard and AT dialing

To switch between AT dialing and keyboard dialing, you must be in the idle state (not connected to a far end data device). That is, the most recent prompt must be either:

NO CARRIER

or

RELEASED

At this point you may type AT to get AT dialing or <CR> to activate keyboard dialing.

* Smartmodem is a trademark of Hayes Microcomputer Products Inc.

Default configuration

This page lists the MPDA's default configuration, as it is shipped from the factory.

These parameters can be changed using keypad dialing commands. To change a parameter listed here, see the corresponding page number for the correct procedure.

Parameter	Default	Page
Language	English	24
Baud rate	9600	24
Parity	space	24
Host/Terminal mode	Terminal	25
Hotline	off	25
Virtual Leased Line	off	25
Data Carrier Detect	on	26
DTR	off	26
Remote Loopback	off	26
Manual Answer	off	12
Emulation selection	Smartmodem 9600	28

C — CALL
A — AUTO DIAL
P — DISPLAY PARAMETERS
CTRL—Z TO ABORT KEYBOARD DIALING
SELECT:

S — SPEEDCALL
M — MODIFY
D — SCRIPTFILE DIRECTORY

Main Menu

A — AUTO NUMBER
S — SPEEDNUMBER
R — REMOTELOOPBACK
SELECT:

M — MANUAL ANSWER
F — SCRIPTFILE
Q — QUIT MODIFY

Modify Menu

L — LEARN SCRIPT
D — DELETE SCRIPT
SELECT:

E — ESCAPECODE
Q — QUIT SCRIPTMENU

Script File Menu

A — LEARN AUTO DIAL SCRIPT
S — LEARN SPEEDSCRIPT
SELECT:

D — SCRIPTFILE DIRECTORY
Q — QUIT LEARN MENU

Learn Script Menu

Keyboard dialing

This chapter explains the keyboard dialing commands and how to use them. You can enhance your data call dialing by using features such as Speed Call and file scripting.

Keyboard dialing is menu-driven. Examples are on the previous page. Use them as a reference when following procedures.

Each procedure in this chapter assumes you are beginning at the initial prompt of:

ENTER NUMBER OR H (FOR HELP):

To get the initial prompt, hold down the break key(s) for at least 1.6 seconds and hit a carriage return (<CR>). This will release a current data call if you are on one.

Abort current command

To abort the current command:

- 1 Hold down the control key and press Z.

RELEASED

- 2 <CR>.

ENTER NUMBER OR H (FOR HELP):

Note: This command will not work during an active data call. First you must release the call.

Auto Dial

To use:

- 1 A (Auto Dial) <CR>.

CALLING

To define (change):

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 A (Auto Number) <CR>.

AUTO DIAL NO.:

- 3 Enter Auto Dial number and <CR>.

Speed Call

To use:

- 1 S (Speed Call) <CR>.

ENTER ACCESS CODE:

- 2 Enter the access code (Speed Call code) and <CR>.

CALLING

To define (change):

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 S (Speed Number) <CR>.

ENTER ACCESS CODE:

- 3 Enter access code (Speed Call code) of the number you wish to define or change. It can be one, two, or three digits.

ENTER NUMBER: xxx-
(xxx = access code)

- 4 Enter extension number (DN) to be represented by the access code, and <CR>.

Script File

To use:

- 1 Enter script name and <CR>.

The MPDA will connect to the far end data device and the script will be executed automatically. In other words, the MPDA will follow the same steps you took when writing the script. It works like a macro file.

To define:

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 F (Script File) <CR>.

(Terminal displays Script File menu)

- 3 L (Learn Script) <CR>.

(Terminal displays Learn Script menu)

- 4 A (Learn Auto Dial script) <CR>.
or
S (Learn Speed Call script) and <CR>. Enter Speed Call code at prompt ENTER ACCESS CODE: and <CR>.

ACTIVATE LEARN MODE? (Y/N)

- 5 Y <CR>.

ENTER SCRIPT NAME:

- 6 Enter name you want to call the script by and <CR>.

ESCAPE CODE =[+] MODIFY (Y/N)
(+ = escape code key symbol)

- 7 N <CR>.

(Terminal displays Main menu)

- 8 Make a data call, following the exact procedure you wish the script to remember. Press Escape twice (see page 11) to enter privacy mode for password protection. Hit <CR> to exit privacy mode.

- 9 When you have reached the point you wish the script to end at, press Escape three times in quick succession. Continue normally.

- 10 Release the data call and immediately place an Auto Dial or Speed Call for which the Learn Script process was set up for. At

this point the script is saved.

Script File directory

To view a list of your script files:

- 1 D (Script File directory) <CR>.

Your terminal lists the script file names and length in Bytes, plus each script's associated speed call access code (an A in the access code column stands for the Auto Dial script). See example on this page.

SCRIPTFILE DIRECTORY		
ACCESS CODE	SCRIPT NAME	LENGTH (BYTES)

A	EMAIL	262
21	MAINFRAME	455
33	DBASE	345

Delete Script File

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 F (Script File) <CR>.

(Terminal displays Script File menu)

- 3 D (Delete Script File) <CR>.

(Terminal displays Delete menu)

- 4 A (Auto Dial) <CR>.

or

S (Speed Call) <CR>. Enter Speed Call code at prompt:

ENTER ACCESS CODE:

SCRIPT [script name] EXISTS
DELETE? (Y/N)

- 5 Y <CR>.

DELETING.

Escape code

To change Escape code:

1 M (Modify) <CR>.

(Terminal displays Modify menu)

2 F (Script File) <CR>.

(Terminal displays Script File menu)

3 E (Escape Code) <CR>.

ESCAPE CODE =[+] MODIFY (Y/N)

4 Y <CR>.

ENTER ESCAPE CODE:

5 Enter new Escape code (can be a control character) <CR>.

There are three uses for the Escape code character:

- One escape character inserts a pause in a script file.
- Two escape characters puts you into privacy mode, useful for skipping part of a script file procedure for password protection. Hit <CR> to leave privacy mode.
- Three escape characters saves a script file to the MPDA EEPROM.

Note: A guard timer of one second distinguishes the escape sequences. In other words, one escape character is not interpreted as a pause until a full second elapses in which you do not enter another escape character.

Manual answer

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 M (Manual Answer) <CR>.

MANUAL ANSWER (Y/N)

- 3 Y <CR>.

Incoming data calls will give you this prompt:

INCOMING CALL. ANSWER (Y/N)

If you respond N to the prompt in step 2, an incoming data call will connect automatically and you will receive the prompt:

INCOMING CALL CONNECTED

Remote Loopback

- 1 M (Modify) <CR>.

(Terminal displays Modify menu)

- 2 R (Remote Loopback) <CR>.

Remote loopback will be enabled for the next data call only. This feature is useful for diagnostic purposes.

Ring Again

When the far end number is busy you receive the prompt:

BUSY, RING AGAIN? (Y/N)

or

BUSY, PREVIOUS RING AGAIN ACTIVE, REPLACE? (Y/N)

- 1 Y <CR>. Ring Again is activated and will notify you when the far end is free.

RING AGAIN PLACED

When the far end data device is free you receive the prompt:

DATA STATION NOW AVAILABLE,

PLACE CALL? (Y/N)

1 Y <CR>.

Note: You must answer Ring Again within 30 seconds after you are prompted or it cancels. You can only set Ring Again to watch one busy line at a time.

Display parameters

1 P (display parameters) <CR>.

The terminal lists information about the MPDA's configuration. The following example shows the items listed with possible values for each.

The first three parameters give information on the current version MPDA you have (they do not change).

For more detailed descriptions of these parameters, see Keypad dialing.

Engineering code = NT2K0009
Release = 01
Firmware = 3.5
Baud Rate = 19200
Parity = ODD
DTR = ON (Data Terminal Ready)
DCD = ON (Data Carrier Detect)
VLL = OFF (Virtual Leased Line)
Hotline = OFF
Remote Loopback = OFF
Manual Answer = OFF
Data Directory Number = 4000
Auto Dial No. = 3600

AT dialing

AT dialing is similar to the methods used to make data calls with a Hayes Smartmodem.* Some AT commands do not apply to using the MPDA, and are not supported.

Most AT commands begin with the letters "AT" (not case sensitive). These two letters are followed by a one- or two-character command (sometimes followed by additional parameters) and a carriage return <CR>. Each command line is limited to a maximum of 40 characters (not including the "AT" and spaces).

You will not hear any tones when using AT dialing with the MPDA.

Note 1: Remember that all of these commands (except A/ and the escape code) are followed by a carriage return <CR>.

Note 2: If you don't include a numerical parameter with a command, the MPDA assumes the parameter to be zero (0).

A/ (repeat last command)

This sequence repeats the last command you entered. It is not preceded by AT and not followed by <CR>.

ATA (answer)

This answers an incoming data call when the MPDA is set for manual answer (s-register 0 = 0).

ATCn (carrier detect enable/disable, where n = 0, 1)

Carrier detect is enabled when n = 1, disabled when n = 0. When enabled, the carrier detect lead will be off until a data call has been established.

ATDxxxx (dial, where x = 0 - 9)

This performs a manual data call. The digits, xxxx, represent the phone number of the far end data device.

ATEn (echo, where n = 0, 1)

Commands will not echo back to your terminal when n = 0. That is, you will not see your commands, only their result. Commands will echo when n = 1.

ATOn (on-line, where n = 0, 1)

This will put you on-line if you had previously used the escape code (three escape characters) to go off-line. The same result applies to both case n = 0 and n = 1.

**ATQn (result code,
where n = 0, 1)**

Result codes (call progress prompts) are not sent to your terminal when n = 1. That is, you will not see call progress prompts. When n = 0 result codes are sent to your terminal.

**ATV n (verbal result,
where n = 0, 1)**

Verbal prompts are sent to your terminal when n = 1. Numeric prompts are sent when n = 0. The following chart lists the result codes and their meaning.

Numeric	Verbal	Description
0	OK	Command was successful
1	CONNECT	Far end has answered
2	RING	Local end is ringing
3	NO CARRIER	Call was released
4	ERROR	Command line contains an error
Extended codes:		
5	CONNECT 1200	1200 baud connection complete
7	BUSY	Busy signal is detected
10	CONNECT 2400	2400 baud connection complete
11	CONNECT 4800	4800 baud connection complete
12	CONNECT 9600	9600 baud connection complete
14	CONNECT 19200	19200 baud connection complete

**ATXn (result code selection,
where n = 0 - 4)**

When n = 0, the MPDA supports result codes 0 - 4. When n = 1 or 2, the MPDA supports result codes 0 - 5, 10 - 12 and 14. When n = 3 or 4, the MPDA supports result codes 0 - 5, 7, 10 - 12 and 14.

ATZn (soft reset, where n = 0, 1)

This returns S0 through S49 registers and AT configurations to their default settings. The same result applies to both case n = 0 and n = 1.

Registers S50 through S69 will be reset to their default values only upon power-up.

The following commands are extensions to AT dialing used to support Northern Telecom equipment and protocols.

**ATDPxxxx (voice call,
where x = 0 - 9)**

This allows you to make a voice call from your terminal. The digits, xxxx, represent the number of the person you wish to call.

ATF0 (Handsfree/mute)

This allows you to mute your end of a Handsfree call, and to return to normal Handsfree operation.

ATF1 (Hold)

This puts an active voice call on hold.

ATF2 (Select)

This takes a voice call off hold (as if you pressed its DN key).

ATH0 (hang up data call)

This releases an active data call. You must first be off-line (hit three escape characters).

ATHP (hang up voice call)

This releases an active voice call, just as if you pressed the Release key on the phone.

ATTSP! (transparent mode)

You can display the raw signaling messages sent between the PBX and the MPDA using this command. This mode is used by some special software applications.

ATIn (product identification code, where n = 0, 1, 4)

When n = 0, the MPDA displays the contents of S-registers S52 - S54. The default is "960" (Smartmodem V-series 9600 modem). Other possible values are: "122" (Smartmodem 1200) and "240" (Smartmodem 2400). When n = 1, the result is "206." When n = 4, the result is "a037800c004420" and then "b100000000" (these are the same values that Smartmodem V-series 9600 returns).

AT&Cn (carrier detect control, where n = 0, 1)

When n = 0, carrier detect lead is always asserted.
When n = 1, the carrier detect will remain off until the RTS signal from the far end is asserted.

AT&Dn (response to DTR, where n = 0 - 3)

When n = 0, the MPDA will ignore the status of DTR.
When n = 1, the MPDA will resume the offline command state when on-to-off transition of DTR occurs.
When n = 2, MPDA drops the call when on-to-off transition of DTR occurs.
When n = 3, MPDA hangs up when on-to-off transition of DTR occurs and returns its Hayes parameters to their default settings.

AT&Rn (clear-to-send options, where n = 0, 1)

When n = 0, the CTS lead will track the far end DTR or CD leads.
When n = 1, CTS is always present.

AT&Sn (data-set-ready options, where n = 0, 1)

When n = 0, DSR lead will track the far end DTR or CD leads.
When n = 1, DSR is always present.

AT&F (factory configuration profile)

This returns S0 through S49 registers and AT configurations to their default settings.

AT&Yn (recall user profile on power-up, where n = 0, 1)

This returns S0 through S49 registers and AT configurations to their default settings. The same result applies to both case n = 0 and n = 1.

Offline mode

To enter the AT command state from the online data transfer state, press the escape character three times in quick succession.

To return to a command mode (AT or keyboard dialing) while also dropping the call, use the break key(s), enter ATH0, or press P-key and dial *.

To return to online mode, enter ATO0 or ATO1.

Note: While the MPDA is learning a script (keyboard dialing), it will ignore the online escape sequence.

S -registers

S-registers are used to configure the MPDA. Some S-registers do not apply to communication through a PBX, but are included for completeness.

To change the value of an S-register, enter:

ATS n = x

where n is the number of the S-register (0 - 69) you wish to change and x is the new value.

To read an S-register, enter:

ATS n ?

where n is the number of the S-register (0 - 69) you wish to see. It returns the value of the S-register in decimal.

S0 (number of rings incoming; range = 0 - 255)

Auto answer is disabled when $n = 0$. Any other value will be equal to the number of rings before an incoming data call is answered.

S1 (ring count; read only)

This returns the current number of rings for an incoming data call when read.

S2 (escape character; range = 0 - 127)

This holds the ASCII value of the escape character.

**S3 (carriage return character;
range = 0 -127)**

This holds the ASCII value of the carriage return (used for command line termination and prompt termination). The default is 13.

**S4 (line feed character;
range = 0 - 127)**

This holds the ASCII value of the line feed character. The default value is 10.

**S5 (backspace character;
range = 0 - 32, 127)**

This holds the ASCII value of the backspace character. It actually holds two values, one for the backspace key and one for the character echoed to move the cursor back one position.

**S6 (wait time before blind
typing)**

Not applicable.

**S7 (wait time for carrier/dial
tone; range = 1 - 255)**

This holds the Carrier Detect time-out value. When the time (in seconds) elapses, the attempted call is released. The default value is 30 seconds.

**S8 (pause time for comma;
range = 0 - 255)**

A comma included in the dialing sequence is interpreted as a delay. The default delay time is two seconds.

**S9 (carrier detect response
time)**

Not applicable.

S10 (lost carrier hang up delay)

Not applicable.

S11 (DTMF tone duration)

Not applicable.

**S12 (escape code guard time;
range = 0 - 255)**

The guard time aids in recognition of the escape sequence, useful since different numbers of escape characters mean different things. For example, one Escape character is not recognized as a pause until the guard timer expires, indicating no other Escape characters were entered as part of the Escape sequence.

This holds the value of the guard time in milliseconds. The default value is 50 (one second).

**S36 (baud rate adaption;
range = 0, 1)**

Used with SL-100 only. When an attempt to make a connection fails due to incompatible baud rates, this register determines whether to terminate the connection or to adapt to the remote baud rate. S36 set to zero (0) tells the MPDA to release the call. If S36 is set to one (1) and the MPDA is the answering party, then the MPDA will attempt to adapt to the calling party's baud rate. Default is zero.

**S51 (delay until modem pool
activation; range = 0 - 255)**

Each increment of S51 represents a 0.25 second delay before outbound modem pool activation. Default is 16 (4 seconds). This register will not be altered by software reset.

**S52, S53, S54 (product code
response)**

These registers contain the Product Identification code and will output a 3-digit code in response to the "AT10" command. Default value is "960" (Smartmodem V-series 9600 modem). Other possible values are: "122" (Smartmodem 1200) and "240" (Smartmodem 2400). These registers will not be altered by software reset.

**S66 (AT/KBD autobaud
interpretation; range = 0, 1)**

A value of zero (0) means only Hayes autobaud is possible. A value of one (1) means both Hayes and keyboard dialing autobaud is allowed.

Dial modifier

Dial modifiers are special parameters used to tell the MPDA how to dial the data number.

Modifier	Description
0 -9	Digit for dialing
A B C D	Characters for dialing
#	While dialing, instructs PBX to begin dialing the digits entered to this point. After dialing, this character is outputted as tone.
*	After dialing, this character is outputted as a tone.
, (comma)	Delay processing for a period of time, set by S8 register. Default is two seconds.
; (semicolon)	Return to command state after dialing.
!@ P R T W	You can use these characters while dialing but they have no effect in the dialing sequence.

Keypad dialing

The top right-hand function key on your phone is called a Program Key, or P-key. You can use the phone's keypad for voice calls or to operate the MPDA, by using the P-key. You issue commands to the MPDA by pressing the P-key and dialing a one- or two-digit command, then pressing the P-key again to execute the command.

Some P-key commands require a Display on the phone. If you do not have a Display, ignore those commands. Keypad dialing commands are most useful for making simple data calls or for modifying the MPDA's configuration.

In this chapter, feedback from the MPDA refers to what you see on the phone's Display.

Manual data call

- 1 Press P-key and dial #.

MDIAL
ENTER DIGITS, P TO EXIT

- 2 Dial number of far end data device and press P-key.

DATA CALL CONNECTED

Auto Dial

To use:

- 1 Press P-key and dial 61.

To define (change):

- 1 Press P-key and dial 60.

ADIAL
ENTER DIGITS, THEN P

- 2 Dial Auto Dial number and press P-key.

RS232 monitor

- 1 Press P-key and dial 63. The Display shows:

TXD	RXD	DCD	DTR	DSR
0	0	•	•	•

This indicates the status of the EIA leads of the RS232 connected to the MPDA. A dark circle indicates the lead is active. This feature is used for troubleshooting.

Incoming data call monitor

- 1 Press P-key and dial 64. The Display shows one of the following prompts:

INCOMING CALL CONNECTED

or

INCOMPATIBLE INCOMING CALL
RELEASED

or

INCOMING CALL RELEASED

This simply shows the status of incoming data calls.

Cancel Data Ring Again

To cancel a previously activated Ring Again (see page 12):

- 1 Press P-key and dial 39.

DATA RING AGAIN CANCELLED
ENTER P TO EXIT

Language selection

- 1 Press P-key and dial 05. The Display shows the name of the current language selection.
- 2 Use the volume control to scroll through the possible choices:

English = 1

French = 2
- 3 Dial the number shown next to the language choice you desire and press the P-key.

Change baud rate

To set the baud rate for incoming calls or calls made using keypad dialing:

- 1 Press P-key and dial 22.

BAUD RATE
ENTER DIGITS, THEN P

- 2 Dial the number of the baud rate desired and press P-key.

INPUT ACCEPTED

or

BAUD RATE
INVALID INPUT, REENTER

Change parity

Set parity to:

space parity:

- 1 Press P-key and dial 23.

odd parity:

- 1 Press P-key and dial 24.

even parity:

- 1 Press P-key and dial 25.

mark parity:

- 1 Press P-key and dial 26.

Host or Terminal mode

To change to Host mode:

- 1 Press P-key and dial 27. Prompts will not be sent to your terminal.

To change to Terminal mode:

- 1 Press P-key and dial 28. Prompts will be sent to your terminal.

Hotline

To turn Hotline on:

- 1 Press P-key and dial 30. Keyboard dialing automatically makes calls to the Auto Dial number.

To turn Hotline off:

- 1 Press P-key and dial 29.

Virtual Leased Line

To turn on Virtual Leased Line:

- 1 Press P-key and dial 32. This gives the appearance of a dedicated line between your terminal and the far end data device, for applications that require an active data call at all times.

To turn off Virtual Leased Line:

- 1 Press P-key and dial 31.

Note: If a power failure occurs while Virtual Leased Line is on, the MPDA will automatically call back the Auto Dial number when power returns.

Forced DTR

To turn Forced DTR on (Data Terminal Ready):

- 1 Press P-key and dial 34. You can force a data call connection even though the DTR lead of the RS232 is not active.

To turn Forced DTR off:

- 1 Press P-key and dial 33.

Note: This feature is useful for sending data to a printer or for PC to PC connections where neither is configured as the Host.

Dynamic Carrier Detect

To turn Dynamic Carrier Detect on:

- 1 Press P-key and dial 36. Carrier Detect will follow the state of the call.

To turn Dynamic Carrier Detect off:

- 1 Press P-key and dial 35. Carrier detect will always be high, except for 100 ms when a call is first dropped.

Note: This feature is included for those communication software packages that require a transition of Carrier Detect from low (0) to high (1) in order to activate Answer mode.

Remote Loopback

To turn on Remote Loopback:

- 1 Press the P-key and dial 38. Remote Loopback is activated for the next data call only.

To turn Remote Loopback off:

- 1 Press the P-key and dial 37.

Inactivity timeout

The Inactivity Timeout limit is set by the telephone system administrator. The four settings are: off, 15 minutes, 30 minutes, or one hour.

To see what the Timeout limit is, use Display Parameters (P-62, see page 27).

Display parameters

- 1 Press P-key and dial 62. The Display shows (Screen 1):

DATA PARAMETER DISPLAY
SCROLL <<<<>>>>P TO EXIT

You can scroll the Display using the volume control key on the phone. It will show those parameters of the MPDA that can be modified through keypad dialing.

The examples in the next column show possible values for each parameter, and their meaning.

Screen 2:

DTR OFF BAUD RATE 19200
DCD OFF EVEN PARITY

Screen 3:

VLL OFF TERMINAL MODE
RLB OFF HOTLINE OFF

Screen 4:

DDN 4100
TIMEOUT OFF

Screen 5 (SL-100 only):

SPEEDRESTRICTIONOFF
SMARTMODEM9600

DTR = Data Terminal Ready
DCD = Data Carrier Detect
VLL = Virtual Leased Line
RLB = Remote Loopback

DDN = Data Directory Number

Lock data parameters

To lock your configuration settings so that no data parameters can be changed (by using P-65 or any other command):

- 1 Press the P-key and dial 67. Using the volume control key, scroll the telephone's display until it reads "DATA PARAMETERS LOCKED."
- 2 Press the P-key to exit and save the change.

To unlock the parameter settings:

- 1 Press the P-key and dial 67. Using the volume control key, scroll the telephone's display until it reads "DATA PARAMETERS UNLOCKED."
- 2 Press the P-key to exit and save the change.

Reset data parameters

To reset the MPDA configuration to default settings:

- 1 Press the P-key and dial 65. The parameters will return to those shown on page 7.

Note: Unplugging the telephone will not reset the MPDA configuration.

Select emulation

To select the modem type that the MPDA will emulate:

- 1 Press the P-key and dial 66. Using the volume control key, scroll the telephone's display until the correct modem type appears.
- 2 Press the P-key to exit and save the emulation setting.

Possible emulation settings are:

SMARTMODEM 9600

SMARTMODEM 2400

SMARTMODEM 1200

NT KBD DIALING

Note 1: Unless NT keyboard dialing is selected as the emulation type, carriage return <CR> autobaud is disabled and hitting <CR> does not invoke the Main menu. Smartmodem emulation only supports Hayes (AT) commands.

Note 2: Some software packages require forced DTR to be active in order to work properly. Turn on Forced DTR (P34) if the above procedure fails (you may see a list of data parameters rather than emulation settings).

Note 3: If power is dropped while emulating Smartmodem 1200 or 2400, the selection defaults to Smartmodem 9600 upon power up. This does not apply to

Additional features

Autobaud

Autobaud is enabled each time you release a data call.

Each time you enter <CR> to activate keyboard dialing or the letters "AT" to activate AT dialing, the MPDA times the length of bits received and sets the baud rate accordingly.

Autoparity

The MPDA automatically sets the parity each time the letters "AT" are entered for AT dialing.

In Keyboard dialing you must enter a period (.) and <CR>. This is normally the first step to take when your terminal displays a garbled prompt.

Modem Pooling

When you dial a modem pool, the MPDA prompts:

ENTER REMOTE NUMBER

- 1 Enter number of external modem to access and <CR>.

CALL CONNECTED.SESSION STARTS

Troubleshooting

Symptom	Solution
No response when you type <CR> or AT at the terminal.	1 Press P-key and dial 28 to make sure you are in terminal mode. 2 Make sure your PC or terminal's power is on and you are on-line. 3 If the equipment connected to your MPDA is not configured as Data Terminal Equipment, you will need to connect using a null modem cable. 4 Make sure the MPDA is receiving external power. Check to see that the power cables are connected properly and the external power supply is running. 5 If you have a Display on your phone, press the P-key and dial 63 to get into EIA Monitor mode. Check to see that the MPDA is receiving signals from your terminal by watching the RXD indicator on the Display while entering carriage returns on the keyboard. If the indicator flashes, the connection is correct. If not, check the cable to make sure it is standard RS232 and is properly connected.
The prompt: CALL CONNECTED.SESSION STARTS	Check the configuration parameters of the far end data device. If they do not match those of your MPDA, the call will be dropped. You will have to change the parameters of your MPDA to match.

Symptom	Solution
Garbled prompts are sent to your terminal when you type <CR>.	Enter a period (.) followed by <CR> to perform an autoparity.
You are connected to a host computer, but get no response when you try to log on.	First, release the call. Turn on Remote Loopback and make the call again. Type some characters at your terminal. If they echo back and appear on your terminal, the problem is with the far end data device. If the characters do not appear on your terminal, the problem is with the MPDA. Call your telephone system administrator.
You try to make a data call from the initial prompt (or Main menu) in keyboard dialing. You see the prompt: CALLING but no number appears and after 30 seconds you get the prompt: NO SYSTEM RESPONSE	First, hold down the break key(s) for two seconds, enter <CR> and try again to make the data call. If the problem persists, your MPDA is probably disabled. Call your telephone system administrator.

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